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10/784,065	02/20/2004	Daniel J. Magenheimer	200315952-1	2613
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EXAMINER KAW SAR, ABDULLAH AL				
ART UNIT 2195		PAPER NUMBER		
NOTIFICATION DATE 09/16/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/784,065

Applicant(s)

MAGENHEIMER, DANIEL J.

Examiner

ABDULLAH AL KAWSAR

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-27, 29-31, 33 and 35-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-27, 29-31, 33 and 35-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. In view of the Appeal Brief filed on (06/12/2009), PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below. If an appellant wishes to reinstate an appeal after prosecution is reopened, appellant must file a new notice of appeal in compliance with 37 CFR 41.31 and a complete new appeal brief in compliance with 37 CFR 41.37. Any previously paid appeal fees set forth in 37 CFR 41.20 for filing a notice of appeal, filing an appeal brief, and requesting an oral hearing (if applicable) will be applied to the new appeal on the same application as long as a final Board decision has not been made on the prior appeal. If, however, the appeal fees have increased since they were previously paid, then appellant must pay the difference between the current fee(s) and the amount previously paid. Appellant must file a complete new appeal brief in compliance with the format and content requirements of 37 CFR 41.37(c) within two months from the date of filing the new notice of appeal. See MPEP § 1205.
2. Claims 1, 3-27, 29-31, 33, 35-43 are pending.

Claim Objections

3. Claim 43 is objected to because of the following informalities:
 - i. Claim 43, line 4 missing “.” end of the claim.Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 21-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The following language lack antecedent basis:

i. Claim 18, line 3 -- "the value" --

b. The following claim languages are not clearly understood and indefinite:

i. Claim 1, line 4-5 recites "determine..... native operating system or as a virtualized operating system" it is not clearly understood what constitutes determining which operating system or mode to run and when is it determined (i.e. by checking some global value or variable before system boots to any operating system? after system boots up to an operating system? determining during the runtime of an the operating system by reading some value?).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 5-7, 11-15, 17-18, 24-27, 29, 35, 38, 40 and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Kishi (Kishi) US Patent No. 5023771.

8. As per claim 1, Kishi teaches the invention as claimed including a computer system comprising:

at least one processor (col 3, lines 17-18); and

a flexible operating system executable on the at least one processor to (col 1, lines 12-17):

determine whether said flexible operating system is being used as a native operating system or as a virtualized operating system on said computer system (abstract, lines 1-3); and

execute in a first manner as a native operating system on the computer system in response to detecting that said flexible operating system is being used as the native operating system, and execute in a second manner as a virtualized operating system on said computer system in response to detecting that said flexible operating system is being used as the virtualized operating system (col 1, lines 20-35);

wherein said flexible operating system is configured to operate in a non-virtualized environment when said native operating system is being used as the native operating system, and is configured to operate in a virtualized environment when said flexible operating system is being used as the virtualized operating system (col 3, lines 51-63).

9. As per claim 5, Kishi teaches that operating system determines whether said flexible operating system is being used as the native operating system or the virtualized operating system by: checking a global variable that indicates whether said flexible operating system is being used

as the native operating system or as the virtualized operating system on said computer system (abstract, lines 1-3).

10. As per claim 6, Kishi teaches execute an instruction which, when the flexible operating system is being used as the virtualized operating system, causes a Virtual Machine Monitor to set at least one configuration bit to a first value and when the flexible operating system is being used as the native operating system, causes the VMM to set said at least one configuration bit to a different value (col 2, lines 25-40; col 6, lines 15-28).

11. As per claim 7, Kishi teaches set said global variable based at least in part on the value of said at least one configuration bit after executing said instruction (col 1, lines 38-43; col 6, lines 15-28).

12. As per claim 11, Kishi teaches the invention as claimed including a method comprising:
implementing at least one operating system on a computer system(col 3, lines 14-18;
lines 25-28);

determining, by said computer system, whether said at least one operating system is a native operating system or a guest operating system on a virtual machine(abstract, lines 1-3);

said at least one operating system operating in a first manner if determined that it is a native operating system, wherein the native operating system works in a non-virtualized environment (col 1, lines 18-24); and

said at least one operating system operating in a second manner if determined that it is a guest operating system on a virtual machine, wherein the guest operating system operates in a virtual environment provided by the virtual machine (col 1, lines 24-32).

13. As per claim 12, Kishi teaches at least one operating system determining whether it is being used as said native operating system or as said guest operating system on the virtual machine (abstract, lines 1-3).

14. As per claim 13, it has similar limitations as of claim 5 above. Therefore it is rejected under the same rational as of claim 5 above.

15. As per claim 14, Kishi teaches the first manner comprises said native operating system managing hardware resources of the computer system (col 3, lines 25-30).

16. As per claim 15, Kishi teaches wherein said second manner comprises said guest operating system having access to the computer system hardware resources that are managed by the Virtual Machine Monitor (col 3, lines 32-41; lines 57-60).

17. As per claim 17, Kishi teaches the invention as claimed including a computer system:
at least one processor (col 3, lines 17-18);
a virtual machine monitor (col 3, line 22); and

an operating system executable on the least one processor to (col 3, lines 14-18; lines 25-28):

determine whether said operating system is running as a virtualized operating system or native operating system (abstract, lines 1-3); and

adapt operation of said operating system depending on whether it is running as the virtualized operating system or native operating system, wherein the native operating system manages hardware resources in a non-virtualized environment without the VMM, and wherein the virtualized operating system manages hardware resources using the VMM (col 3, lines 25-41; lines 51-60).

18. As per claim 18, it has similar limitations as of claim 5 above. Therefore it is rejected under the same rational.

19. As per claims 24 and 26, they have similar limitations of claims 6 and 7 above. Therefore, they are rejected under the same rational as claims 6 and 7 above.

20. As per claim 25, it has similar limitations of combined limitations of claims 5 and 7 above. Therefore it is rejected under the same rational as of combined limitations of claims 5 and 7 above.

21. As per claim 27, it is a system claim of claim 17 above. Therefore, it is rejected under the same rational as claim 17 above.

22. As per claims 29, it has similar limitations as of claim 14 above. Therefore it is rejected under the same rational as of claim 14 above.

23. As per claim 35, it is method and system claims of claim 17 above. Therefore it is rejected under the same rational as claim 17 above.

24. As per claim 38, it has similar limitations as of claims 5 above. Therefore it is rejected under the same rational as of claim 5 above.

25. As per claim 42, Kishi teaches the virtualized operating system manages hardware resources of the system by using the VMM, and where the native operating system manages the hardware resources in non-virtualized environment without using the VMM (col 3, lines 25-41; lines 51-60).

26. As per claim 43, it has similar limitations as of claims 42 above. Therefore it is rejected under the same rational as of claim 42 above.

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. Claim 3-4, 8,10, 16, 19-23, 30, 31, 33, 37, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishi (Kishi) US Patent No. 5023771, in view of Bennett et al. (Bennett) US Patent Publication No. 2004/011732.

29. As per claim 3, Kishi teaches that said flexible operating system executing in said second manner comprises said operating system acting as a virtualized operating system (col 2, lines 25-35).

Kishi do not specifically disclose said operating system acting as a paravirtualized operating system.

However Bennett teaches that said operating system acting as a paravirtualized operating system (par. 0021).

30. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Bennett into the method of Kishi to have the virtualized operating system acting as paravirtualized operating system. The modification would have been obvious because one of the ordinary skills of the art would utilize the teaches Bennett to have the virtualized operating system acting as paravirtualized operating system as the paravirtualized operating system can handle the privileged instructions more efficiently.

31. As per claim 4, Bennett teaches that paravirtualized operating system is operable to make a call to a Virtual Machine Monitor (VMM) for performing at least one privileged operation (par 0020, lines 1-6).

32. As per claim 8, Bennett teaches make a call to a Virtual Machine Monitor (VMM) for performing at least one privileged operation(par. 0020, lines 3-5).

33. As per claim 10, Bennett teaches making the call to said VMM is used for performing said at least one privileged operation if it is determined that said flexible operating system is being used as virtualized operating system on said computer system (par. 0031, lines 6-9; par. 0020, lines 1-6).

34. As per claim 16, Bennett teaches wherein said guest operating system makes, for at least one privileged operation a call to the VMM (par 0020, lines 1-6).

35. As per claim 19, Bennett teaches operating system checks said value of said global variable before performing certain privileged operations (par. 0021).

36. As per claim 20, Bennett teaches that operating system performs the determining by determining, before execution of certain privileged instructions, whether said operating system is running as the virtualized operating system or native operating system (par. 0020).

37. As per claim 21 and 22, their combined limitations are similar to limitations of claim 10 above. Therefore they are rejected under the same rational as of claim 10 above.

38. As per claims 23, it has similar limitations of claim 8 above. Therefore, it is rejected under the same rational as claim 8 above.

39. As per claims 30-31 and 33, they have similar limitations as of claims 3, 4 and 10 above. Therefore they are rejected under the same rational as of claims 3, 4 and 10 above.

40. As per claim 37, Bennett teaches that means for virtualizing resources of said system and multiplexing said resources among one or more virtualized operating systems (par. 0019).

41. As per claim 39, Bennett teaches that if determined that it is being used as a virtualized operating system, said flexible operating system acting as a virtualized operating system (par. 0032, lines 1-4; par. 0033, lines 1-4).

42. As per claim 41, Kishi teaches said first manner comprises acting as a native operating system, and wherein said second manner comprises acting as a virtualized operating system(col 2, lines 25-35).

Kishi does not specifically disclose that the acting as paravirtualized operating system.

However Bennett teaches acting as paravirtualized operating system (par. 0021)

43. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kishi (Kishi) US Patent No. 5023771, in view of Fish(Fish) US Patent No. 6199159.

44. As per claim 36, Kishi does not specifically disclose determining means makes the determination during a boot-up process of the system.

However, Fish teaches determining means makes the determination during a boot-up process of the system (col 2, lines 64-67 through col 3, lines 1-5).

45. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Fish into the method of Kishi to determining during boot-up process. The modification would have been obvious because one of the ordinary skills of the art utilize the value saved in VMCS in the processor as an identifier to determine the operating mode during boot-up process.

46. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kishi (Kishi) US Patent No. 5023771, in view of Bennett et al. (Bennett) US Patent Publication No. 2004/011732, as applied to claim 8, and further in view of Waldspurger et al.(Waldspurger) US Patent No. 6725289.

47. As per claim 9, Bennett teaches making the call to said VMM (par. 0020, 1-6; par 0027).

Bennett and Kishi do not specifically disclose VMM uses an Application Program Interface (API) defined for said VMM.

However, Waldspurger teaches VMM uses an Application Program Interface (API) defined for said VMM (col 10, lines 24-45)

48. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Waldspurger into the combined method of Bennett and Kishi to use application program interface to call VMM. The modification would have been obvious because one of the ordinary skills of the art would implemented any well known software communication architecture to communicate between guest and VMM which includes using Application Program Interface as a method of communication between application.

Allowable Subject Matter

49. Claim 1 would be allowable if rewritten in independent form including all of the limitations of claims 4 and 5 and any intervening claims.

Response to Arguments

50. Applicant's arguments with respect to claim(s) have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

51. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDULLAH AL KAWSAR whose telephone number is (571)270-3169. The examiner can normally be reached on 7:30am to 5:00pm, EST.

52. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng Ai T. An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

53. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

/Abdullah-Al Kawsar/
Examiner, Art Unit 2195